



SEQUENCE LISTING

C
<110> Cahoon, Rebecca E.
Hitz, William D.
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<141> 2000-10-11

<150> 60/082,960
<151> 1998-04-24

<150> PCT/US99/08790
<151> 1999-04-22

<160> 24

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<211> 462
<212> DNA
<213> Oryza sativa

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accacaagtt catcggcggag gagacgtccg cggggctcgg cgccaccgcg gacctcaccg 360
acgaccgcgac ctggatcgctc gacccctcg atggcaccaac caatttcgtc catggcttcc 420
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<211> 114
<212> PRT
<213> Oryza sativa

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Ala Gly Glu Ile Ile Arg Lys Gly Phe Tyr Gln Thr Lys Asn Val Glu
20 25 30

His Lys Gly Gln Val Asp Leu Val Thr Glu Thr Asp Lys Ala Cys Glu
35 40 45

Asp Leu Ile Phe Asn His Leu Arg Lys His Tyr Pro Asp His Lys Phe
50 55 60

Ile Gly Glu Glu Thr Ser Ala Gly Leu Gly Ala Thr Ala Asp Leu Thr
65 70 75 80

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Asp Asp Pro Thr Trp Ile Val Asp Pro Leu Asp Gly Thr Thr Asn Phe
85 90 95

Val His Gly Phe Pro Phe Val Cys Val Ser Ile Gly Leu Thr Val Gly
100 105 110

Lys Ile
114

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<212> DNA
<213> Glycine max

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<212> PRT
<213> Glycine max

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Lys Asn Val Glu His Lys Gly Gln Val Asp Leu Val Thr Glu Thr Asp
35 40 45

Lys Ala Cys Glu Glu Leu Ile Phe Asn His Leu Lys Gln Leu Tyr Pro
50 55 60

Thr His Lys Phe Ile Gly Glu Glu Thr Thr Ala Ala Tyr Gly Thr Thr
65 70 75 80

Glu Leu Thr Asp Glu Pro Thr Trp Ile Val Asp Pro Leu Asp Gly Thr
85 90 95

Thr Asn Phe Val His Gly Phe Pro Phe Val Cys Val Ser Ile Gly Leu
100 105 110

Thr Ile Gly Lys Thr Pro Thr Ile Gly Val Val Tyr Asn Pro Ile Ile
115 120 125

Asn Glu Leu Phe Thr Gly Ile His Gly Lys Gly Ala Phe Leu Asn Gly
130 135 140

Asn Pro Ile Lys Val Ser Ser Gln Thr Glu Leu Ile Ser Ser Leu Leu
145 150 155 160

Ala Thr Glu Ala Gly Thr Lys Arg
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<210> 5
<211> 667
<212> DNA
<213> Glycine max

<400> 5
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<213> Glycine max

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20 25 30

Val Val Phe Asp Pro Ser Gly Ala Asp Phe Ala Ile Thr Ser Gln Arg
35 40 45

Val Ala Val Ser Asn Pro Phe Xaa Lys Asp Glu Leu Val Glu Thr Arg
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Arg Lys Met Gly Trp Glu Ile Tyr Asn
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<211> 1003

<212> DNA

<213> Triticum aestivum

<400> 7

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agggccaggt ggatttggtg acggagacgg acaaggcatg cgagatctc atcttcaacc 180
acctccggat gctctacccg gaccacaagt tcatcggcga ggagacgtct gcagccctcg 240
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ttcccaccgt tggagttgtg tacaacccca tcatgaatga gctttcaca gctgttcgtg 420
gaaaagggtgc ttttctcaat ggctctccaa taaaacatc gcctcaaaat gagttggtga 480
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ccaacagaat taataagtta ctattcaaga ttagatctat acgtatgtgt ggctcttgg 600
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ttcaagtaga atgaaagaat gtaagatggc cccaccaata agtaatttag ggctacttt 900
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<210> 8

<211> 267

<212> PRT

<213> Triticum aestivum

<400> 8

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Ala Gly Glu Ile Ile Arg Lys Ser Phe Tyr Leu Ser Lys Lys Val Glu
20 25 30

His Lys Gly Gln Val Asp Leu Val Thr Glu Thr Asp Lys Ala Cys Glu
35 40 45

Asp Leu Ile Phe Asn His Leu Arg Met Leu Tyr Pro Asp His Lys Phe
50 55 60

Ile Gly Glu Glu Thr Ser Ala Ala Leu Gly Ser Thr Asp Asp Leu Thr
65 70 75 80

Tyr Asp Pro Thr Trp Ile Val Asp Pro Leu Asp Gly Thr Thr Asn Phe
85 90 95

Val His Gly Phe Pro Phe Val Cys Val Ser Ile Gly Leu Thr Ile Gly
100 105 110

Lys Ile Pro Thr Val Gly Val Val Tyr Asn Pro Ile Met Asn Glu Leu
115 120 125

Phe Thr Ala Val Arg Gly Lys Gly Ala Phe Leu Asn Gly Ser Pro Ile
130 135 140

Lys Thr Ser Pro Gln Asn Glu Leu Val Lys Ala Leu Met Val Thr Glu
145 150 155 160

Val Gly Thr Lys Arg Asp Lys Ser Thr Leu Asp Asp Thr Thr Asn Arg
165 170 175

Ile Asn Lys Leu Leu Phe Lys Ile Arg Ser Ile Arg Met Cys Gly Ser
180 185 190

Leu Ala Leu Asn Met Cys Gly Val Ala Cys Gly Arg Leu Asp Leu Cys
195 200 205

Tyr Glu Ile Gly Phe Gly Gly Pro Trp Asp Val Ala Ala Gly Ala Leu
210 215 220

Ile Leu Lys Glu Ala Gly Gly Phe Val Phe Asp Pro Ser Gly Asp Glu
225 230 235 240

Phe Asp Leu Met Ala Gln Arg Met Ala Gly Ser Asn Gly His Leu Lys
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Asp Gln Phe Ile Lys Ala Leu Gly Asp Ala Ser
260 265

<210> 9

<211> 1090

<212> DNA

<213> Hordeum vulgare

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gtgcattgtat ccttttagatg gaacaacaaa cttgcacat gtttacccca gttttctgt 180
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tggccctatg tgctggagca ctcgtacaat ttctgcatct tctggcaaag gtgcttattg 300
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gagctcgaat gagttctca ctggattcct tttgcgttgc tcgaatgtat caggaagaaa 960
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aaaaaaaaaa

1090

<210> 10
<211> 249
<212> PRT
<213> Hordeum vulgare

<400> 10
His Glu Asp Lys Leu Ser Glu Ser Val Ile Leu Glu Val Val Thr Lys
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Asn Phe Arg Asp His Leu Ile Leu Gly Glu Glu Gly Gly Leu Ile Gly
20 25 30
Asp Ser Leu Ser Glu Tyr Leu Trp Cys Ile Asp Pro Leu Asp Gly Thr
35 40 45
Thr Asn Phe Ala His Gly Tyr Pro Ser Phe Ser Val Ser Ile Gly Val
50 55 60
Leu Tyr Arg Gly Lys Pro Ala Ala Ala Thr Val Val Glu Phe Cys Gly
65 70 75 80
Gly Pro Met Cys Trp Ser Thr Arg Thr Ile Ser Ala Ser Ser Gly Lys
85 90 95
Gly Ala Tyr Cys Asn Gly Gln Lys Ile His Val Ser Pro Thr Glu Lys
100 105 110
Val Glu Gln Ser Leu Leu Val Thr Gly Phe Gly Tyr Glu His Asp Asp
115 120 125
Ala Trp Leu Thr Asn Ile Asn Leu Phe Lys Glu Phe Thr Asp Val Ser
130 135 140
Arg Gly Val Arg Arg Leu Gly Ser Ala Ala Ala Asp Met Ser His Val
145 150 155 160
Gly Leu Gly Ile Thr Glu Ala Tyr Trp Glu Tyr Arg Leu Lys Pro Trp
165 170 175
Asp Met Ala Ala Gly Val Leu Ile Val Glu Glu Ala Gly Gly Val Val
180 185 190
Thr Arg Met Asp Gly Gly Glu Phe Thr Val Phe Asp Arg Ser Val Leu
195 200 205
Val Ser Asn Gly Val Val His Asp Gln Leu Leu Glu Arg Ile Arg Pro
210 215 220
Ala Thr Glu Asp Leu Lys Lys Gly Ile Asp Phe Ser Leu Trp Phe
225 230 235 240
Lys Pro Asp Lys Tyr Pro Thr Asp Phe
245

<210> 11
<211> 989
<212> DNA
<213> Zea mays

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ccttgaacag attcatattt gtcgtccagg catcatcgta ttcatatcca aaacctgtga 660
cgagaagtga ttgttccacc ttgtctgtct gactgacatg aatccttgc 720
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aaaattctca cccacttggaa accacacggg ttttcccaagg aaagaacaac taatggcaca 840
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<210> 12
<211> 136
<212> PRT
<213> Zea mays

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Tyr Tyr Ile Gly Gln Arg Ile His Val Ser Gln Thr Asp Lys Val Glu
20 25 30

Gln Ser Leu Leu Val Thr Gly Phe Gly Tyr Glu His Asp Asp Ala Trp
35 40 45

Thr Thr Asn Met Asn Leu Phe Lys Glu Phe Thr Asp Ile Ser Arg Gly
50 55 60

Val Arg Arg Leu Gly Ser Ala Ala Ala Asp Met Ser His Ile Gly Leu
65 70 75 80

Gly Ile Thr Glu Ala Tyr Trp Glu Tyr Arg Leu Lys Pro Trp Asp Val
85 90 95

His Ala Gly Val Leu Ile Val Glu Glu Ala Gly Gly Val Val Thr Arg
100 105 110

Met Asp Gly Gly Glu Phe Thr Val Phe Asp Arg Ser Val Leu Val Ser
115 120 125

Asn Gly Leu Val His Gly Gln Val
130 135

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<210> 13
<211> 492
<212> DNA
<213> Zea mays

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<222> (442)
<223> n = a, c, g or t

<220>
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<222> (485)
<223> n = a, c, g or t

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<211> 338
<212> PRT
<213> Zea mays

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Arg Ala Ala Ser Pro Val Ser Ser Ala Val Leu Ser Ala Ser Gly Arg
35 40 45

Gln Pro Met Ser Thr Val Arg Ala Ser Phe Ala Ala Gly Ala Ala Gly
50 55 60

Arg Arg Ala Ala Ala Val Gly Glu Leu Ala Thr Glu Arg Leu Val Glu
65 70 75 80

Val Ala Gln Arg Ala Ala Asp Ala Ala Gly Glu Val Leu Arg Lys Tyr
85 90 95

Phe Arg Gln Arg Val Glu Ile Ile Asp Lys Glu Asp His Ser Pro Val
100 105 110

Thr Ile Ala Asp Arg Glu Ala Glu Glu Ala Met Val Ser Val Ile Leu
115 120 125

Lys Ser Phe Pro Thr His Ala Ile Phe Gly Glu Glu Asn Gly Trp Arg
130 135 140

Cys Ala Glu Asn Ser Ala Asp Phe Val Trp Val Leu Asp Pro Ile Asp
145 150 155 160

Gly Thr Lys Ser Phe Ile Thr Gly Lys Pro Leu Phe Gly Thr Leu Ile
165 170 175

Ala Leu Leu His Asn Gly Lys Pro Val Ile Gly Val Ile Asp Gln Pro
180 185 190

Ile Leu Arg Glu Arg Trp Ile Gly Val Asp Gly Lys Gln Thr Thr Leu
195 200 205

Asn Gly Gln Glu Ile Ser Val Arg Ser Cys Asn Leu Leu Ala Gln Ala
210 215 220

Tyr Leu Tyr Thr Thr Ser Pro His Leu Phe Glu Ala Asp Ala Glu Asp
225 230 235 240

Ala Phe Ile Arg Val Arg Asn Lys Val Lys Val Pro Leu Tyr Gly Cys
245 250 255

Asp Cys Tyr Ala Tyr Ala Leu Leu Ala Ser Gly Phe Val Asp Ile Val
260 265 270

Val Glu Ser Gly Leu Lys Pro Tyr Asp Phe Leu Ser Leu Val Pro Val
275 280 285

Ile Glu Gly Ala Gly Gly Ser Ile Thr Asp Trp Arg Gly Asp Lys Leu
290 295 300

His Trp Pro Val Thr Ala Glu Ser Arg Pro Thr Ser Phe Asn Val Val
305 310 315 320

Ala Ala Gly Asp Ala Arg Val His Lys Glu Ala Leu Asp Ala Leu Arg
325 330 335

Trp Arg

<210> 15

<211> 593

<212> DNA

<213> Oryza sativa

<400> 15

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aacagaggat cttatgttaa aatgccatgt acttgactga atatttggtt attgaagtcc 540
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<210> 16

<211> 142

<212> PRT

<213> Oryza sativa

<400> 16

His Glu Leu Thr Lys Val Glu Gln Ser Leu Leu Val Thr Gly Phe Gly

1

5

10

15

Tyr Glu His Asp Asp Ala Trp Val Thr Asn Ile Asn Leu Phe Lys Glu
20 25 30

Tyr Thr Asp Ile Ser Arg Gly Val Arg Arg Leu Gly Ser Ala Ala Ala
35 40 45

Asp Met Ser His Val Ala Leu Gly Ile Thr Glu Ala Tyr Trp Glu Tyr
50 55 60

Arg Leu Lys Pro Trp Asp Met Ala Ala Gly Val Leu Ile Val Glu Glu
65 70 75 80

Ala Gly Gly Met Val Ser Arg Met Asp Gly Gly Glu Phe Thr Val Phe
85 90 95

Asp Arg Ser Val Leu Val Ser Asn Gly Val Val His Asp Gln Leu Leu
100 105 110

Asp Arg Ile Gly Pro Ala Thr Glu Asp Leu Lys Lys Lys Gly Ile Asp
115 120 125

Phe Ser Leu Trp Phe Lys Pro Asp Lys Tyr Pro Thr Asp Phe
130 135 140

<210> 17

<211> 1103

<212> DNA

<213> Glycine max

<400> 17

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tcggtaacaa agtcgccc当地 gctgc当地 ggag aagttatc当地 caaatacttc agaaaaaaact 180
tcgacgtt当地 tcaacaaacat gatctc当地 agtcaaccat tgcatc当地 tctgctgagg 240
aggctatgg ttc当地 aatcata ctagacaatt tcccttctca tgccat当地 ttac ggagagggaaa 300
atgggtggag gt当地 gt当地 gaagaa aagaatgctg attatgtttg ggtatttagat cccatagatg 360
ggactaagag cttt当地 attact gggaaacctg tatttggatc tctc当地 tt当地 cttctacaaa 420
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cttgaat当地 aat cttc当地 cttc当地 cttc当地 tttgtctt当地 ggtt当地 gttt当地 aaaagggggg 1080
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<210> 18

<211> 295

<212> PRT

<213> Glycine max

<400> 18

Met Phe Ser Gln Cys His Phe Leu Ser His Ser Pro Ile Pro Asn Thr
1 5 10 15

Thr Phe Arg Leu Arg Ala Met Ala Pro His Ser Thr Pro Leu Glu Leu
20 25 30

Asn Arg Phe Ala Glu Val Gly Asn Lys Val Ala Asp Ala Ala Gly Glu
35 40 45

Val Ile Arg Lys Tyr Phe Arg Lys Asn Phe Asp Val Ile His Lys His
50 55 60

Asp Leu Ser Pro Val Thr Ile Ala Asp Gln Ser Ala Glu Glu Ala Met
65 70 75 80

Val Ser Ile Ile Leu Asp Asn Phe Pro Ser His Ala Ile Tyr Gly Glu
85 90 95

Glu Asn Gly Trp Arg Cys Glu Glu Lys Asn Ala Asp Tyr Val Trp Val
100 105 110

Leu Asp Pro Ile Asp Gly Thr Lys Ser Phe Ile Thr Gly Lys Pro Val
115 120 125

Phe Gly Thr Leu Val Ala Leu Leu Gln Asn Gly Thr Pro Ile Leu Gly
130 135 140

Ile Ile Asp Gln Pro Val Leu Arg Glu Arg Trp Ile Gly Ile Ala Gly
145 150 155 160

Lys Arg Thr Ser Leu Asn Gly Gln Glu Ile Ser Thr Arg Thr Cys Ala
165 170 175

Asp Leu Ser Gln Ala Tyr Leu Tyr Thr Thr Ser Pro His Leu Phe Asn
180 185 190

Gly Asp Ala Glu Glu Ala Phe Ile Arg Val Arg Ser Lys Val Lys Phe
195 200 205

Gln Leu Tyr Gly Cys Asp Cys Tyr Ala Tyr Ala Leu Leu Ser Ser Gly
210 215 220

Phe Val Asp Leu Val Val Glu Ser Gly Leu Lys Pro Tyr Asp Phe Leu
225 230 235 240

Ala Leu Ile Pro Val Ile Glu Gly Ala Gly Gly Val Ile Thr Asp Trp
245 250 255

Lys Gly Asp Lys Leu Phe Trp Glu Ala Ser Pro Leu Ser Ile Ala Thr
260 265 270

Ser Phe Asn Val Val Ala Ala Gly Asp Lys Gln Ile His Gln Gln Ala
275 280 285

Leu Asp Ser Leu Gln Trp Lys
290 295

<210> 19
<211> 1418
<212> DNA
<213> *Triticum aestivum*

<400> .19

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<210> 20

<211> 324

<212> PRT

<213> *Triticum aestivum*

<400> 20

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Leu Ala Thr Phe Ser Ser Ser Ala Ala Gly Arg Ala Cys Gly Ile Ala
20 25 30

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Gly Arg Trp Met Gly Ser Val Arg Ala Ser Pro Ser Glu Ala Gly Gly
35 40 45

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Trp Ala Val Ala Ala Gly Lys Glu Gly Val Asp Met Glu Arg Leu
50 55 60

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Val Ala Val Ala Gln Ser Ala Ala Asp Ala Ala Gly Glu Val Leu Arg
65 70 75 80

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```

Lys Tyr Phe Arg Gln Arg Phe Glu Ile Ile Asp Lys Glu Asp His Ser
85 90 95

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Pro Val Thr Ile Ala Asp Arg Glu Ala Glu Glu Ala Met Thr Ser Val
100 105 110

```

```

Ile Leu Lys Ser Phe Pro Thr His Ala Val Phe Gly Glu Glu Asn Gly
115 120 125

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```

Trp Arg Cys Ala Glu Lys Ser Ala Asp Tyr Val Trp Val Leu Asp Pro
130 135 140

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Ile Asp Gly Thr Lys Ser Phe Ile Thr Gly Lys Pro Leu Phe Gly Thr

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145 150 155 160
Leu Ile Ala Leu Leu His Asn Gly Lys Pro Val Met Gly Ile Ile Asp
165 170 175
Gln Pro Ile Leu Arg Glu Arg Trp Val Gly Val Asp Gly Lys Lys Thr
180 185 190
Thr Leu Asn Gly Gln Glu Ile Ser Val Arg Pro Cys Asn Val Leu Glu
195 200 205
Gln Ala Tyr Leu Tyr Thr Thr Ser Pro His Leu Phe Glu Gly Asp Ala
210 215 220
Glu Asp Ala Phe Ile Arg Val Arg Asp Lys Val Lys Val Pro Leu Tyr
225 230 235 240
Gly Cys Asp Cys Tyr Ala Tyr Ala Leu Leu Ala Ser Gly Phe Val Asp
245 250 255
Leu Val Val Glu Ser Gly Leu Lys Pro Tyr Asp Phe Leu Ser Leu Val
260 265 270
Pro Val Ile Glu Gly Ala Gly Gly Ser Ile Thr Asp Trp Glu Gly Asn
275 280 285
Lys Leu His Trp Pro Val Ser Ser Glu Ser Arg Pro Thr Ser Phe Asn
290 295 300
Val Val Ala Ala Gly Asp Ser His Val His Gly Gln Ala Leu Ala Ala
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Leu Arg Trp Arg

<210> 21
<211> 273
<212> PRT
<213> Lycopersicon esculentum

<400> 21
Met Ala Arg Asn Gly Ser Leu Glu Glu Phe Leu Gly Val Ala Val Asp
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Ala Ala Lys Arg Ala Gly Glu Ile Ile Arg Lys Gly Phe His Glu Thr
20 25 30

Lys His Val Val His Lys Gly Gln Val Asp Leu Val Thr Glu Thr Asp
35 40 45

Lys Ala Cys Glu Asp Leu Ile Phe Asn His Leu Lys Gln His Phe Pro
50 55 60

Ser His Lys Phe Ile Gly Glu Glu Thr Ser Ala Ala Thr Gly Asp Phe
65 70 75 80

Asp Leu Thr Asp Glu Pro Thr Trp Ile Val Asp Pro Val Asp Gly Thr
85 90 95

Thr Asn Phe Val His Gly Phe Pro Ser Val Cys Val Ser Ile Gly Leu

100 105 110

Thr Ile Gly Lys Ile Pro Thr Val Gly Val Val Tyr Asp Pro Ile Ile
115 120 125

Asp Glu Leu Phe Thr Gly Ile Asn Gly Lys Gly Ala Tyr Leu Asn Gly
130 135 140

Lys Pro Ile Lys Val Ser Ser Gln Ser Glu Leu Val Lys Ser Leu Leu
145 150 155 160

Gly Thr Glu Val Gly Thr Thr Arg Asp Asn Leu Thr Val Glu Thr Thr
165 170 175

Thr Arg Arg Ile Asn Asn Leu Leu Phe Lys Val Arg Ser Leu Arg Met
180 185 190

Cys Gly Ser Cys Ala Leu Asp Leu Cys Trp Val Ala Cys Gly Arg Leu
195 200 205

Glu Leu Phe Tyr Leu Ile Gly Tyr Gly Gly Pro Trp Asp Val Ala Gly
210 215 220

Gly Ala Val Ile Val Lys Glu Ala Gly Gly Val Leu Phe Asp Pro Ser
225 230 235 240

Gly Ser Glu Phe Asp Ile Thr Ser Gln Arg Val Ala Ala Thr Asn Pro
245 250 255

His Leu Lys Glu Ala Phe Val Glu Ala Leu Gln Leu Ser Glu Tyr Val
260 265 270

Ser

<210> 22
<211> 268
<212> PRT
<213> Lycopersicon esculentum

<400> 22
Met Ala Gln Asn Gly Ser Val Glu Gln Phe Leu Asp Val Ala Val Glu
1 5 10 15

Ala Ala Lys Lys Ala Gly Glu Ile Ile Arg Glu Gly Phe Tyr Lys Thr
20 25 30

Lys His Val Glu His Lys Gly Met Val Asp Leu Val Thr Glu Thr Asp
35 40 45

Lys Ala Cys Glu Asp Phe Ile Phe Asn His Leu Lys Gln Arg Phe Pro
50 55 60

Ser His Lys Phe Ile Gly Glu Glu Thr Thr Ala Ala Cys Gly Asn Phe
65 70 75 80

Glu Leu Thr Asp Glu Pro Thr Trp Ile Val Asp Pro Leu Asp Gly Thr
85 90 95

Thr Asn Phe Val His Gly Phe Pro Phe Val Cys Val Ser Ile Gly Leu

100 105 110

Thr Ile Glu Lys Lys Pro Thr Val Gly Val Val Tyr Asn Pro Ile Ile
115 120 125

Asp Glu Leu Phe Thr Gly Ile Asp Gly Lys Gly Ala Phe Leu Asn Gly
130 135 140

Lys Pro Ile Lys Val Ser Ser Gln Ser Glu Leu Val Lys Ala Leu Leu
145 150 155 160

Ala Thr Glu Ala Gly Thr Asn Arg Asp Lys Leu Val Val Asp Ala Thr
165 170 175

Thr Gly Arg Ile Asn Ser Leu Leu Phe Lys Val Arg Ser Leu Arg Met
180 185 190

Cys Gly Ser Cys Ala Leu Asn Leu Cys Gly Val Ala Cys Gly Arg Leu
195 200 205

Asp Leu Phe Tyr Glu Leu Glu Phe Gly Gly Pro Trp Asp Val Ala Gly
210 215 220

Gly Ala Val Ile Val Lys Glu Ala Gly Gly Phe Val Phe Asp Pro Ser
225 230 235 240

Gly Ser Glu Phe Asp Leu Thr Ala Arg Arg Val Ala Ala Thr Asn Ala
245 250 255

His Leu Lys Asp Ala Phe Ile Lys Ala Leu Asn Glu
260 265

<210> 23
<211> 287
<212> PRT
<213> Synechocystis sp.

<400> 23
Met Thr Ser Ala Gln Lys Pro Val Phe Ser Pro Ser Asp Leu Gln Thr
1 5 10 15

Trp Leu Glu Ile Ala Thr Glu Ala Val Leu Ala Ala Gly Ala Glu Ile
20 25 30

Phe Ser Leu Trp Gly Lys Val Gln Gln Ile Gln Glu Lys Gly Arg Ala
35 40 45

Gly Asp Leu Val Thr Glu Ala Asp Arg Gln Ala Glu Ala Ile Ile Leu
50 55 60

Glu Ile Ile Lys Arg Arg Cys Pro Asp His Ala Ile Leu Ala Glu Glu
65 70 75 80

Ser Gly Gln Leu Gly Gln Val Asp Asn Pro Phe Cys Trp Ala Ile Asp
85 90 95

Pro Leu Asp Gly Thr Thr Asn Phe Ala His Ser Tyr Pro Val Ser Cys
100 105 110

Val Ser Ile Gly Leu Leu Ile Gln Asp Ile Pro Thr Val Gly Val Val

115 120 125

Tyr Asn Pro Phe Arg Gln Glu Leu Phe Arg Ala Ala Thr Ser Leu Gly
130 135 140

Ala Thr Leu Asn Arg Arg Pro Ile Gln Val Ser Thr Thr Ala Ser Leu
145 150 155 160

Asp Lys Ser Leu Leu Val Thr Gly Phe Ala Tyr Asp Arg Val Lys Thr
165 170 175

Leu Asp Asn Asn Tyr Pro Glu Phe Cys Tyr Leu Thr His Leu Thr Gln
180 185 190

Gly Val Arg Arg Ser Gly Ser Ala Ala Ile Asp Leu Ile Asp Val Ala
195 200 205

Cys Gly Arg Leu Asp Gly Tyr Trp Glu Arg Gly Ile Asn Pro Trp Asp
210 215 220

Met Ala Ala Gly Ile Val Ile Val Arg Glu Ala Gly Gly Ile Val Ser
225 230 235 240

Ala Tyr Asp Cys Ser Pro Leu Asp Leu Ser Thr Gly Arg Ile Leu Ala
245 250 255

Thr Asn Gly Lys Ile His Gln Glu Leu Ser Gln Ala Leu Ala Ala Thr
260 265 270

Pro Gln Trp Phe Gln Gln Tyr Ala Ala Ala Arg Ala Gln Lys Ile
275 280 285

<210> 24
<211> 267
<212> PRT
<213> Synechocystis sp.

<400> 24
Met Leu Pro Glu Val Glu Gln Arg Leu Phe Ile Ala Gln Gln Leu Ala
1 5 10 15

Ala Val Ser Gly Glu Ile Leu Ile Gln Tyr Phe Arg Arg Ser His Leu
20 25 30

Gln Gly Gly Thr Lys Ile Asp Gln Val Ser Ala Ile Val Thr Gln Ala
35 40 45

Asp Glu Glu Ala Glu Gln Ala Met Val Asp Leu Ile Gln Ala Gln Phe
50 55 60

Pro Gln Asp Gly Val Ile Arg Glu Glu Gly Lys Asn Ile Ala Gly Lys
65 70 75 80

Ser Gly Tyr Thr Trp Val Leu Asp Pro Ile Asp Gly Thr Ser Ser Phe
85 90 95

Val Arg Gly Leu Pro Ile Phe Ala Thr Leu Ile Gly Leu Val Asp Ala
100 105 110

Asp Met Arg Pro Val Leu Gly Ile Ala His Gln Pro Ile Ser Gly Asp

115 120 125

Arg Trp Gln Gly Val Gln Gly Glu Gln Ser Asn Val Asn Gly Ile Pro
130 135 140

Leu Val Asn Pro Tyr Lys Ala Ser Glu Ile Asn Leu Thr Ala Ala Cys
145 150 155 160

Ile Val Ser Thr Thr Pro Leu Met Phe Thr Thr Pro Val Gln Gln Gln
165 170 175

Lys Met Ala Asp Ile Tyr Arg Gln Cys Gln Arg Thr Ala Phe Gly Gly
180 185 190

Asp Cys Phe Asn Tyr Leu Ser Ala Ala Ser Gly Trp Thr Ala Met Pro
195 200 205

Leu Val Ile Val Glu Ala Asp Leu Asn Phe Tyr Asp Phe Cys Ala Leu
210 215 220

Ile Pro Ile Leu Thr Gly Ala Asn Tyr Cys Phe Thr Asp Trp Gln Gly
225 230 235 240

Lys Glu Leu Thr Pro Glu Ser Thr Glu Val Val Ala Ser Pro Asn Pro
245 250 255

Lys Leu His Ser Glu Ile Leu Ala Phe Leu Gln
260 265
